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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,186	12/03/2001	Hyun Kyun Kim	P-0305	4452

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EXAMINER

PHAM, TUAN

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/998,186

Applicant(s)

KIM, HYUN KYUN

Examiner

TUAN A. PHAM

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Applicant's remark, filed on 04/21/2005, with respect to the rejection(s) of claim(s) 1-6 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Koizumi et al. (U.S. Patent No.: 5,745,583).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-8, 10-14, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Markow et al. (U.S. Patent No.: 6,459,942, hereinafter, "Markow") in view of Koizumi et al. (U.S. Patent No.: 5,745,583, hereinafter "Koizumi").**

Regarding claim 1, Markow teaches a speaker phone system (see figure 4), comprising: a CODEC adapted to convert a digital speech signal into an analog speech signal (see figure 4, CODEC 34, col.4, ln.11-36); an equalizer adapted to adjust a timbre of the converted analog speech signal inputted thereto from the CODEC (see

figure 4, equalizer 30, col.4, ln.11-36); and a DSP supply the digital speech signal received from his/her counterpart's mobile communication terminal to the CODEC (see figure 4, DSP 32, col.4, ln.11-36).

It should be noticed that Markow fails to clearly teach a CPU adapted to supply a timbre control signal corresponding to a frequency band set by a user to the equalizer. However, Koizumi teaches such features (see figure 1, microcomputer 11, equalizer 6, mode selecting key 16, memory 12, col.2, ln.40-67, col.3, ln.1-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Koizumi, into view of Markow in order to improve the sound in the communication system.

Regarding claim 2, Markow further teaches the speaker system further comprising a speaker adapted to reproduce the speech signal applied thereto from the equalizer (see figure 4, speaker 14, equalizer 30, col.4, ln.11-36).

Regarding claim 3, Markow further teaches the speaker system wherein the equalizer comprises a plurality of active filters (see figure 4, equalizer 28, filter network F, col.5, ln.52-67).

Regarding claim 4, Koizumi further teaches the frequency band set on a menu of the mobile communication terminal by the user (see figure 1, memory 12, col.2, ln.40-67, col.3, ln.1-10).

Regarding claim 5, Markow teaches a speaker phone system (see figure 4), comprising: a microphone adapted to input a transmitting speech signal (see figure 4, MIC 16, col.4, ln.11-36); a speaker adapted to reproduce a received speech signal (see

figure 4, speaker 14, col.4, ln.11-36); a CODEC adapted to perform an analog-digital conversion for the transmitting speech signal and a digital-analog conversion for the received speech signal (see figure 4, CODEC 34, col.4, ln.11-36); a CPU adapted to generate a control signal according to a frequency band (see figure 4, DSP 32, col.4, ln.11-36); the equalizer being connected to the microphone (see figure 4, MIC 16, equalizer 28), the speaker and the CODEC in such a fashion that the equalizer is disposed between the microphone/speaker and the CODEC (see figure 4, CODEC 34, speaker 14, MIC 16, equalizers 28, 30).

It should be noticed that Markow fails to clearly teach an equalizer control section adapted to generate a timbre control signal according to the control signal of the CPU; and an equalizer adapted to adjust a frequency band of the transmitting/received speech signals according to the timbre control signal inputted thereto from the equalizer control circuit. However, Koizumi teaches such features (see figure 1, microcomputer 11, equalizer 6, equalizer selecting means 14, mode selecting key 16, memory 12, col.2, ln.40-67, col.3, ln.1-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Koizumi, into view of Markow in order to improve the sound in the communication system.

Regarding claim 6, Koizumi further teaches the frequency band set on a menu of the mobile communication terminal by the user (see figure 1, memory 12, col.2, ln.40-67, col.3, ln.1-10).

Regarding claim 7, Markow teaches a speaker phone system (see figure 4), comprising:

a converting device to convert a digital signal into an analog signal (see figure 4, CODEC 34, col.4, ln.11-36), and

an equalizing device coupled to the converting device to adjust the analog signal (see figure 4, CODEC 34, equalizers 28, 30).

It should be noticed that Markow fails to teach an input device to allow a user to set a frequency band of the mobile terminal; and a control device to provide a timbre control signal to the equalizer, the timbre control signal being based on the frequency band set by the user. However, Koizumi teaches such features (see figure 1, microcomputer 11, equalizer 6, equalizer selecting means 14, mode selecting key 16, mode setting mean 13, memory 12, col.2, ln.40-67, col.3, ln.1-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Koizumi, into view of Markow in order to improve the sound in the communication system.

Regarding claim 8, Koizumi further teaches a speaker to provide audio (see figure 1, speaker 20).

Regarding claim 10, Markow further teaches converting device comprises a coder and decoder device (see col.4, ln.1-36).

Regarding claim 11, Koizumi further teaches the control device includes a processor and an equalizing control device (see figure 1, microcomputer 11 should be included processor, equalizer means 14).

Regarding claim 12, Koizumi further teaches the processor generates a control signal corresponding to the frequency band set by the user (see col.2, ln.40-67, col.3, ln.1-10).

Regarding claim 13, Koizumi further teaches the equalizing control device receives the control signal and provides the timbre control signal based on the received control signal (see col.2, ln.40-67, col.3, ln.1-10).

Regarding claim 14, Koizumi further teaches the control signal adjusts the frequency band of the analog signal input to the equalizing device according to the control signal (see col.2, ln.40-67, col.3, ln.1-10).

Regarding claim 17, Markow further teaches a microphone to provide an analog signal (see figure 4, MIC 16).

Regarding claim 18, Markow further teaches the equalizing device adjusts the analog signal from the microphone and the converting device converts the adjusted analog signal into a digital signal (see figure 4, MIC 16 is received analog signal from user, EQ 28, CODEC 36).

4. Claims 9 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Markow et al. (U.S. Patent No.: 6,459,942, hereinafter, "Markow") in view of Koizumi et al. (U.S. Patent No.: 5,745,583, hereinafter "Koizumi") as applied to claim 7 above, and further in view of Zangi et al. (U.S. Patent No.: 6,775,322, hereinafter, "Zangi").

Regarding claim 9, Markow and Koizumi, in combination, fails to teach the equalizing device comprises a plurality of active filters. However, Zangi teaches such features (see col.15, ln.29-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Zangi, into view of Markow and Koizumi in order to filter out the unwanted signals.

Regarding claim 15, Koizumi further teaches an antenna to receive/transmit signal (see figure 8, antenna 324).

Regarding claim 16, Koizumi further teaches the mobile terminal comprises a telephone (see figure 8).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is (571) 272-8097. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (571) 272-7499 and

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Art Unit 2643
July 9, 2005
Examiner

Tuan Pham


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600